

Notice of Allowability

Application N .

10/061,067

Examin r

Michael A. Lyons

Applicant(s)

DUBOVITSKY, SERGE

Art Unit

2877

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-- The MAILING DATE of this communication appears on the cover sheet with th correspond nc address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 10 March 2004.
2. ☒ The allowed claim(s) is/are 1-9,11,12 and 14-18.
3. ☒ The drawings filed on 16 September 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachm nt(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT AND STATEMENT OF REASONS FOR ALLOWANCE

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with John Kusmiss on May 20, 2004.

The application has been amended as follows:

Claim 10 has been deleted, with its content applied to the end of claim 7 as follows:

"...a comparator for comparing the first portion of the phase modulated carrier signal with the second portion of the phase modulated carrier signal to determine a distance between the target and a fixed point[.];

wherein the comparator comprises an intensity comparator to discriminate a signal traveling from the target with a parasitic self-interference signal."

Allowable Subject Matter

Claims 1-9, 11-12, and 14-18 are allowed in view of the prior art.

The following is an examiner's statement of reasons for allowance:

As to claims 1, 7, 11, 14, and 15, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a heterodyne interferometer system and method, in combination with the rest of the limitations of the above claims.

With further regard to the claims, the applicant's remarks in response to the previous Office Action lay out detailed reasons for the allowability of the claims over the prior art. In particular, the prior art of record fails to disclose the elimination or minimization of a self-interference signal generated by the operation of the device in order to detect a pure, accurate signal coming from the target object, in combination with the rest of the elements and method steps of the corresponding claims.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 571-272-2420. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAL
May 20, 2004



Samuel A. Turner
Primary Examiner

8 a reference path for directing a second portion of the phase modulated carrier
9 signal to an optical reference location; and

10 a comparator for comparing the first portion of the phase modulated carrier signal
11 with the second portion of the phase modulated carrier signal to determine a distance between
12 the target and a fixed point;

*wherein the comparator comprises an intensity comparator to discriminate a signal
traveling from the target with a parasitic self-interference signal.*

1 Claim 8 (Currently Amended): The heterodyne interferometer of Claim 7 ~~wherein~~
2 ~~the modulator applies a phase modulation at a modulation frequency to the carrier signal, and~~
3 wherein the first portion of the phase modulated carrier signal is demodulated at the modulation
4 frequency after being directed to the target.

1 Claim 9 (Currently Amended): The heterodyne interferometer of Claim 8 further
2 comprising a frequency shifter for shifting the frequency of the phase modulated carrier signal
3 prior to the directing of the first and second portions of the phase modulated carrier signal to the
4 target and optical reference location, respectively.

1 ~~Claim 10 (Currently Amended): The heterodyne interferometer of Claim 8~~
2 ~~wherein the comparator comprises an intensity comparator to discriminate between a signal~~
3 ~~traveling from the target with a parasitic self-interference signal.~~

1 Claim 11 (Previously Presented): A method for distinguishing a target signal in a
2 heterodyne interferometer with a parasitic interference signal comprising the steps of:
3 providing a signal source to deliver a carrier signal;
4 applying a modulation to the carrier signal, where said modulation is selected
5 from one of phase modulation and frequency modulation;